

We claim:

1. A system for performing a medical procedure on a patient, comprising:

a medical device comprising:

a holding portion;

5 a shaft associated with said holding portion and having a distal portion for performing a medical procedure on a patient; and

an actuating assembly located proximal to said holding portion; and

10 a processing device coupled to said actuating assembly, said processing device being user programmable to initiate at least one of a plurality of functions in response to actuation of said actuating assembly.

2. The system of claim 1, wherein said processing device is programmed to initiate at least one of said plurality of functions in response to actuation of said actuating assembly.

15 3. The system of claim 1, further comprising an imaging system coupled to said processing device.

20 4. The system of claim 3, wherein said plurality of functions is chosen from the group consisting of: storing a displayed image; retrieving a stored image; adding an identification mark to a displayed image; magnify a displayed image; reducing a displayed image; navigating a pointer and color coding a displayed image.

25 5. The system of claim 1, wherein said plurality of functions is chosen from the group consisting of: initiating pacing; deploying a mapping basket; retracting a mapping basket; initiating mapping; initiating ablation; delivering medication to a site of interest; delivering fluid through the shaft; delivering contrast agent to a site of interest; measuring heart rate; measuring time between portions of a heart beat; adjusting generator settings; and varying energy delivery characteristics to an operative element of the distal portion.

30 6. The system of claim 1, further comprising:  
a storage device; and

a visual display viewable by a person holding said holding portion; and  
wherein said plurality of functions includes storing information displayed on said visual  
display to the storage device.

5           7.     The system of claim 6, wherein said information includes information  
representative of an area of interest of said patient's body.

8.     The system of claim 1, further comprising:  
a storage device; and  
10     a visual display viewable by a person holding said holding portion;  
wherein said plurality of functions includes retrieving information stored on a storage  
device and displaying said information on said visual display.

15           9.     The system of claim 8, wherein said information includes information  
representative of an area of interest of said patient's body.

20           10.    The system of claim 1, wherein:  
said medical device further comprises at least one electrode in said distal position;  
said system further comprises a generator to supply power to said at least one electrode;  
and  
said plurality of functions includes powering the generator to supply power to said at  
least one electrode.

25           11.    The system of claim 1, wherein said device is a catheter.

12.    The system of claim 1, wherein said processing unit is programmable to initiate a  
set of said plurality of functions in a sequence, each one of said set of said plurality of functions  
being initiated in the sequence in response to an actuation of said first actuating assembly.

13. The system of claim 1, wherein said processing device is programmable to be responsive to a manner in which said actuating assembly is actuated, said processing device initiating a respective one of said plurality of functions based on said manner.

5 14. The system of claim 13, wherein said manner includes a repetitive actuation of said actuating assembly within a predetermined period of time.

15. The system of claim 14, wherein:  
said processing device is programmable to initiate a first one of said plurality of functions  
10 in response to a single actuation of said actuating element and said processing device is programmable to initiate a second one of said plurality of functions in response to two actuations of said actuating element within a predetermined period of time.

16. The system of claim 1, further comprising:  
15 a second actuating assembly located proximal to said holding portion and associated with said processing device; wherein:  
said processing device is programmable to:  
initiate at least one of said plurality of functions upon actuation of said first actuating assembly; and  
20 initiate at least one other of said plurality of functions upon actuation of said second actuating assembly.

17. The system of claim 1, further comprising:  
a visual display for displaying a list of options related to the medical procedure;  
25 wherein said processing device is programmable to initiate an option upon selection of one of said options by actuating said actuating assembly.

18. The system of claim 17, further comprising:  
a second actuating assembly associated with said processing device;  
30 wherein said processing device is programmable to advance from one option to a next option in said list of options upon actuation of said second actuating assembly.

19. The system of claim 1, further comprising:  
a visual display connected to said processing unit to display a graphical representation of  
at least one device used in the procedure;

5 wherein actuation of said actuating assembly moves a pointer displayed on said visual  
display.

20. The system of claim 19, wherein said actuating assembly is chosen from a group  
consisting of a trackball, a joystick, a rotatable sleeve, a disk, a sliding element, and a plurality of  
10 buttons, wherein each button is arranged to indicate a direction by which said pointer moves in  
response to an actuation of a respective one of said plurality of buttons.

21. The system of claim 1, wherein the said actuating assembly is chosen from the  
group consisting of a button, a switch, a trackball, a joystick, a rotatable sleeve, a disk and a  
15 sliding element.

22. The system of claim 1, wherein said actuating assembly is integrated with said  
holding portion.

23. The system of claim 1, wherein said actuating assembly is removably attached to  
said holding portion.

24. The system of claim 1, wherein the device further comprises a steering assembly  
on the holding portion, to deflect the distal portion of the device.

25. A system for performing a medical procedure on a patient, comprising:  
a handle and a shaft attached thereto, said shaft having a distal portion for performing the  
procedure;

an actuating assembly associated with the handle, the actuating assembly being actuatable by a person holding said handle;

wherein said system commences a first predetermined function in response to application of pressure on said actuating assembly;

5        said system stops said first predetermined function when said pressure is removed;

      said system commences a second predetermined function in response to application of pressure on said actuating assembly after said first predetermined function is stopped; and

      said system stops said second predetermined function when said pressure is removed.

10        26.     The system of claim 25, wherein said handle provides the person with feedback when said system commences each predetermined function.

      27.     A medical device for use by an operator to perform a medical procedure in the cardiovascular system of a patient, said device comprising:

15        a handle having a shaft attached thereto, a distal portion of said shaft being insertable into a patient's heart; and

      an actuating assembly proximal to said handle to initiate at least two predetermined functions, said actuating assembly being actuatable in at least two different manners, wherein each of said at least two predetermined functions correlates to a respective one of said at least  
20        two different manners.

      28.     The device of claim 27, wherein said actuating assembly has at least two positions and initiation of said functions is dependent on said position of said actuating assembly.

25        29.     The device of claim 28, wherein:  
      said actuating assembly is a switch having a first, relaxed position, a second unrelaxed position and a third, unrelaxed position, wherein said switch is biased towards said first position upon release of pressure placed on said switch; and

said second position is one of said at least two different manners and said third position is another of said at least two different manners.

30. A method of operating a medical device having a handle, an actuator proximal to the handle, and a shaft attached to the handle, said shaft having an operative distal portion for performing a medical procedure in a body, the method comprising:

advancing the distal position to a site of interest;

actuating said actuator a first time, to initiate a first function; and

actuating said actuator a second time to initiate a second function different from said first function.

31. The method of claim 30, further comprising programming a processing device to initiate said first function and said second function. In response to said first actuating step and said second actuating step, respectively.

32. The method of claim 31, wherein said programming step comprises programming the processing device to initiate a successive one of a sequence of functions in response to each actuation of said actuator, said sequence of functions including said first function and said second function.

33. The method of claim 32, wherein said programming step is performed before said advancing step.

34. The method of claim 31, wherein:

said first actuating step includes actuating said actuator in a first manner; and

said second actuating step includes actuating said actuator in a second manner different from said first manner.

35. The method of claim 30, further comprising:

actuating said actuator a third time to initiate a third function different from said first and second functions.

5 36. A method of operating a medical device having a visual display, comprising:  
advancing a portion of the medical device to a site of interest;  
observing a list of options on said visual display;  
navigating through said list of options by actuating an actuator assembly located proximal  
to said handle; and  
selecting one of said list of options by actuating the actuator assembly, to initiate a  
10 function associated with said selection.

37. A removable actuating assembly for controlling operation of a medical device,  
comprising:  
an actuator to initiate a function of the medical device; and  
15 a sleeve removably attachable to an object, wherein the actuator is supported by the  
sleeve.

38. The assembly of claim 37, wherein the sleeve is an elastic ring.

20 39. The assembly of claim 37, wherein the sleeve is a band having connectable first  
and second ends.

40. The assembly of claim 37, further comprising Velcro to connect the first and  
second ends.

25 41. The assembly of claim 39, wherein the actuator is electrically connectable to a  
processor controlling operation of the medical device.

30 42. The assembly of claim 37, wherein the actuator is electrically connectable to a  
processor controlling an imaging system.

43. The assembly of claim 37, wherein the object is a part of a body of an operator of said medical device.

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